REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 3 – 6 and 8 - 22 are pending in the present application. Claims 1, 5, 8, 13, 17 and 21 are independent claims. By this response, claim 2 is cancelled and claims 1, 5, and 13 are amended.

Allowed Subject Matter

Applicants thank the Examiner for noting that claims 8 – 12 and 21 - 22 are allowed as written. Applicants wish to pursue the patentability of all claims at this time, however.

Examiner Interview

Applicants' Representative conducted a telephone interview with the Examiner on April 6, 2009. During this interview, the Examiner agreed that data fusion meets the transformation aspect of the "machine-or-transformation" test and that he would reconsider the §101 rejection of claims 1 – 6 and 13 – 20 upon presentation of a clear definition and explanation data fusion as it relates to the present invention. Applicants hereby present such clarifications and explanations.

Claim Rejections – 35 U.S.C. §101

Claims 1 – 6 and 13 – 20 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Specifically, the claims are rejected as failing the "machine-or-transformation" test as recently clarified by the Federal Circuit in *In re Bilski,* 545 F.3d 943

(2008). Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Independent Claim 1

Independent claim 1, as amended, pertains to a method for the identification of potential targets from image data that has undergone one of spatial or temporal fusion Specifically, independent claim 1 begins with "receiving at least two frames of image data from at least one imaging sensor" and calls for either the temporal or spatial fusion of that data depending on how many imaging sensors the data comes from. Applicants respectfully submit that independent claim 1 is, therefore, tied to a specific machine as required by *Bilski*. Specifically, the method of independent claim 1 requires image data from at least one imaging sensor. Applicants also respectfully submit that independent claim 1 satisfies the "transformation" requirement by reciting spatial and temporal fusion of data.

Machine

Independent claim 1 discusses temporal fusion for multiple frames of image data from a single sensor, and spatial fusion for individual frames of image data from multiple sensors. The nature and character of the method claimed in independent claim 1 therefore clearly and inextricably depends on the type and quantity of imaging sensors used to provide the image data. Applicants therefore respectfully submit that independent claim 1 clearly meets the "machine" requirement of the "machine-or-transformation" test recited in *Bilski*.

Transformation

"Spatial fusion is defined as the fusion between different sensors, and temporal fusion is defined as the temporal integration across different time frames within a single sensor." (Specification, Para. [0007]).

Sensor fusion is the combining of sensory data from disparate sources (Sensor Fusion defined by Wikipedia). Spatial fusion is therefore sensor fusion, or the combination of data from different sensors. Applicants respectfully submit that the spatial fusion aspect of independent claim 1 is, therefore, a data transformation step as it involves the combination of data from different sources.

Temporal integration is the combining of sensory data from the same source but from different points in time. Temporal fusion is therefore temporal integration, or the combination of multiple time frames of data. Applicants respectfully submit that the temporal fusion aspect of independent claim 1 is, therefore, a data transformation step as it involves the combination of multiple time frames of data from the same source.

The Federal Circuit in *Bilski* held that transformation of data is sufficient to render a process patentable "so long as the claimed process is limited to a practical application of a fundamental principle to transform specific data." (*Bilski* at 963). In independent claim 1, the spatial and temporal fusion techniques are limited to the practical application of transforming

incoming image data into fused image data, which is then analyzed to determine if it contains potential targets. The spatial and temporal fusion techniques claimed do not, therefore, pre-empt uses of data fusion principles outside of image-based target detection, and are limited only to the transformation of input data.

Summary

At least in view of the above, Applicants respectfully submit that independent claim 1 satisfies at least either the "machine" or "transformation" aspects of the "machine-or-transformation" test. Applicants therefore respectfully submit that independent claim 1 satisfies the requirements of 35 U.S.C. §101 and is directed to statutory subject matter.

Independent Claim 5

Independent claim 5 pertains to a method for identifying potential targets from image data, the method comprising, in pertinent part, "receiving at least two frames of image data from at least one imaging sensor," and "fusing the frames of image data after thresholding, by spatial fusion if the frames of image data are frames of image data from a plurality of sensors or by temporal fusion if the frames of image data are frames of image data from across multiple time frames of at least one sensor; and identifying candidate targets from the fused image data."

Machine

Applicants respectfully submit that independent claim 5 satisfies the "machine" requirement of the "machine-or-transformation" test for at least the same reasons at set forth with respect to independent claim 1. As in independent claim 1, the method of independent claim 5 depends on how many sensors the image data being processed originated from. Independent claim 5 is therefore clearly and strongly tied to at least one imaging sensor, thereby satisfying the "machine" aspect of the "machine-or-transformation" test.

Transformation

Applicants respectfully submit that "fusing the frames of image data" is a clear transformation step that creates "fused image data," from which candidate targets are identified. The fused image data is created during the course of the method described in independent claim 5 from the input data provided thereto. Independent claim 5 therefore effects a transformation of data, creating a new data set from an input data set. Applicants respectfully submit that, for at least the same reasons as set forth with respect to independent claim 1, independent claim 5 is directed to statutory subject matter because it effects a transformation of data and is limited to a practical application of that transformation.

Summary

At least in view of the above, Applicants respectfully submit that independent claim 5 satisfies at least either the "machine" or "transformation" aspects of the "machine-or-

transformation" test. Applicants therefore respectfully submit that independent claim 1 satisfies

the requirements of 35 U.S.C. §101 and is directed to statutory subject matter.

Claim 13

Independent claim 13 pertains to a method for identifying potential targets from image

data, the method comprising, in pertinent part, "receiving as input data, a plurality of time frames

of data from at least one sensor " and "extracting, from said time frames of data, at least one

feature."

Machine

Applicants respectfully submit that independent claim 13 satisfies the "machine"

requirement of the "machine-or-transformation" test for at least the same reasons at set forth with

respect to independent claim 1. The method of independent claim 13 specifically requires

multiple time frames of data from at least one sensor. Independent claim 13 is therefore clearly

and strongly tied to at least one sensor, thereby satisfying the "machine" aspect of the "machine-

or-transformation" test.

Transformation

Applicants respectfully submit that "extracting, from said time frames of data, at least

one feature" is a clear transformation step that creates an "extracted feature," which is evaluated

to determine whether that feature is a potential target. The extracted feature is created during the

course of the method described in independent claim 13 from the input data provided thereto,

and all subsequent analysis and detection operations are performed on that extracted feature. Independent claim 13 therefore effects a transformation of data, creating a new data set (the extracted feature) from an input data set. Applicants respectfully submit that, for at least the same reasons as set forth with respect to independent claim 1, independent claim 13 is directed to statutory subject matter because it effects a transformation of data and is limited to a practical application of that transformation.

<u>Claim 17</u>

Independent claim 17 pertains to a method for identifying potential targets from image data, the method requiring "receiving, as input, data from a plurality of sensors," and including a pre-detection spatial fusion technique that creates "pre-detection fused data."

Machine

Applicants respectfully submit that independent claim 17 satisfies the "machine" requirement of the "machine-or-transformation" test for at least the same reasons at set forth with respect to independent claim 1. The method of independent claim 17 specifically requires data from a plurality of sensors. The method is only suitable for data coming from at least two different sensors. Independent claim 17 is therefore clearly and strongly tied to a plurality of sensors, thereby satisfying the "machine" aspect of the "machine-or-transformation" test.

Transformation

Applicants respectfully submit that "performing a pre-detection fusion technique on data corresponding to at least one extracted feature from each sensor," which creates fused data that is examined for potential targets, is a clear transformation of data. The fused data is created during the course of the method described in independent claim 17 from the input data provided thereto, and all subsequent analysis and detection operations are performed on that fused data. Independent claim 17 therefore effects a transformation of data, creating a new data set (the fused data) from an input data set. Applicants respectfully submit that, for at least the same reasons as set forth with respect to independent claim 1, independent claim 17 is directed to statutory subject matter because it effects a transformation of data and is limited to a practical application of that transformation.

<u>Claims 2 – 4, 6, 14 – 16 and 18 – 20</u>

Applicants respectfully submit that claims 2 – 4, 6, 14 – 16, and 18 – 20 are allowable at least by virtue of their dependency from independent claims 1, 5, 13, and 17.

<u>Summary</u>

At least for the reasons set forth above regarding the data transformation aspects of claims 1, 5, 13, 17, and all claims depending therefrom, Applicants respectfully submit that all presently pending claims meet the requirements of 35 U.S.C. §101. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.
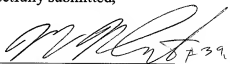
Conclusion

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but to merely show the state of the art, no comment need be made with respect thereto.

In view of the above amendment, applicant believes the pending application is in condition for allowance. Thus, the Examiner is respectfully requested to reconsider the outstanding rejections and issue a Notice of Allowance in the present application.

However, should the Examiner believe that any outstanding matters remain in the present application, the Examiner is requested to contact Applicants' representative, Naphtali Matlis (Reg. No. 61,592) at the telephone number of the undersigned in order to discuss the application and expedite prosecution.

Dated: June 4, 2009

Respectfully submitted,

By _____

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